GENERAL NOTES

1. *PRECAST CONCRETE BOX CULVERTS 12'x6'shall conform to the requirements of Article 540.06 of the Standard Specifications, the Special Provisions and the applicable requirements of ASTM C1577.*

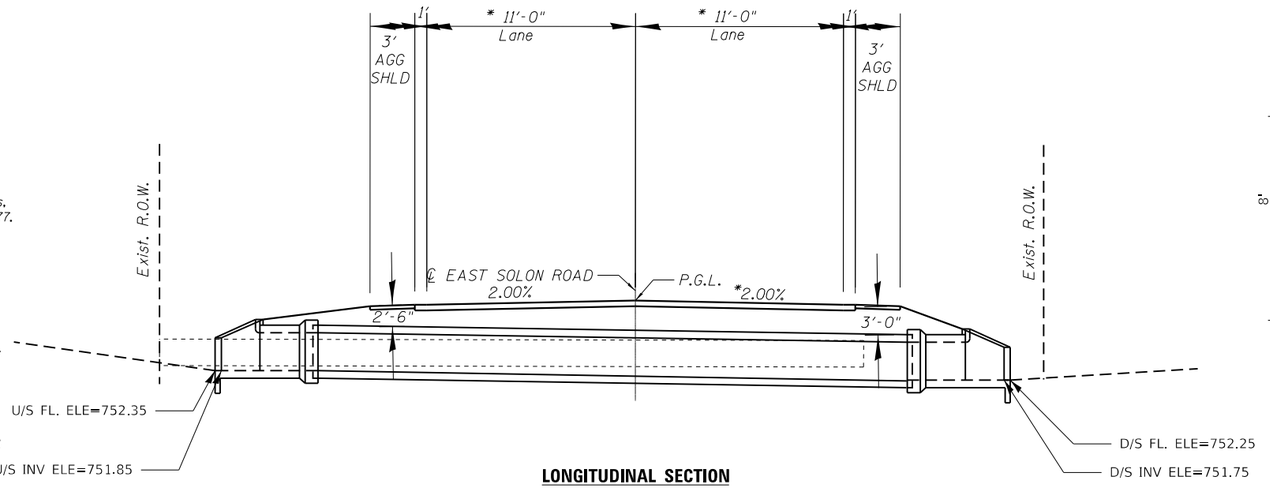
   Excavation and backfill required for bedding and placement of the PRECAST CONCRETE BOX CULVERTS 12'x6' shall be in accordance with Article 540.06, the details in the plans and the Special Provisions.

   The minimum precast concrete strength shall be 5,000 psi.

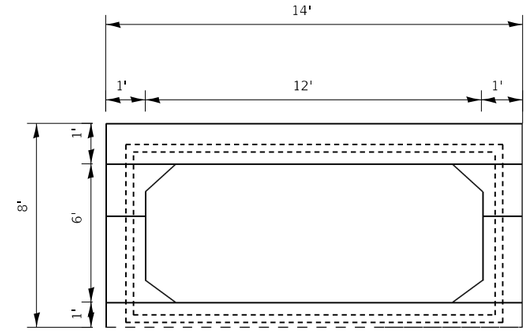
   Lifting holes shall be filled with concrete plugs and mastic after box sections are in place.

   Fill varies 2'-6" to 3'-0"

3. *Contractor shall maintain streamflow in accordance with the Standard Specifications Article 502.*
4. *Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.*
5. *Reinforcement bars designated (E) shall be epoxy coated*



LONGITUDINAL SECTION



SECTION THROUGH PRECAST BARREL

GENERAL NOTES

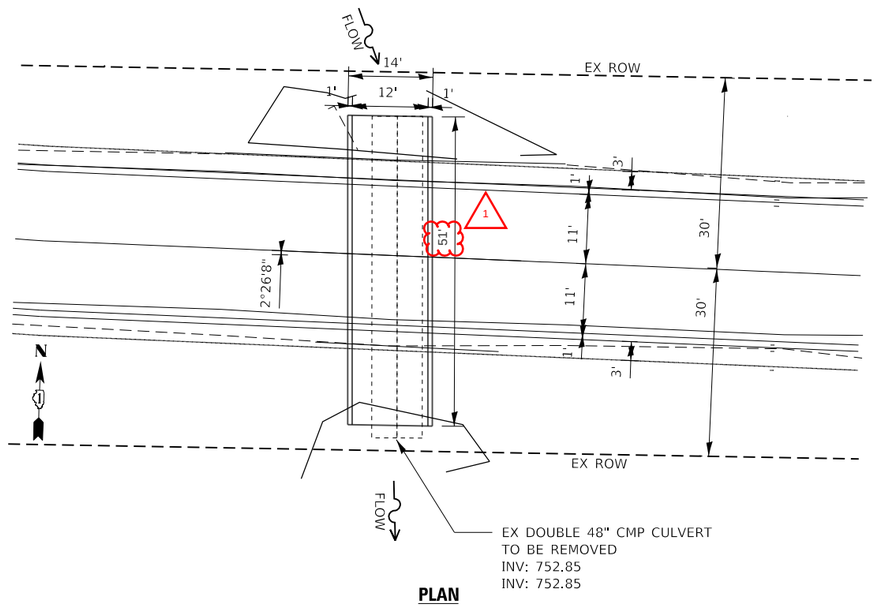
1. PRECAST CONCRETE BOX CULVERT 12'x6' SECTIONS SHALL CONFORM TO THE REQUIREMENTS OF ARTICLE 540.06 OF THE STANDARD SPECIFICATIONS FILL = 2.0 FT.
2. THE MINIMUM CONCRETE STRENGTH SHALL BE 5,000 PSI.
3. LIFTING HOLES SHALL BE FILLED WITH CONCRETE PLUGS AND MASTIC AFTER BOX SECTIONS ARE IN PLACE.

BENCHMARK 1:

SITE BENCHMARK 50:
RAILROAD SPIKE
IN UTILITY POLE
EL: 760.53 (NAVD 88)

EXISTING PIPE CULVERT:

THE EXISTING PIPE CULVERT CONSISTS OF TWO (2) 48" CMP CULVERTS APPROXIMATELY 51' LONG.
STAGED CONSTRUCTION WILL BE UTILIZED.



PLAN

WATERWAY INFORMATION

Drainage Area = 0.25 Sq. mi.

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Nat. H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
	10	321	16	53	757.0	3.3	0.3	760.3	757.3
Design	30	459	16	64	757.4	3.2	0.8	760.6	758.2
	50	515	16	66	757.5	3.2	1.0	760.7	758.5
Base	100	602	16	66	757.7	3.1	2.1	760.8	759.8
Max. Calc.	500	813	16	66	758.1	3.0	2.3	761.1	760.4

10-YEAR VELOCITY THROUGH EXISTING STRUCTURE=7.7 FT/S

10-YEAR VELOCITY THROUGH PROPOSED STRUCTURE=3.4 FT/S

2-YEAR FLOW RATE=137 CU FT/S

SECTION THRU PRECAST BARREL

Furnished and installed under the pay item "Precast Concrete Box Culverts" (Section 540 of the Standard Specifications)

DESIGN SPECIFICATIONS

2014 AASHTO LRFD Bridge Design Specifications, 7th Edition

DESIGN STRESSES

FIELD UNITS
f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)

PRECAST UNITS
f'c = 5,000 psi
fy = 65,000 psi (Welded Wire Fabric)

LOADING HL-93

Allow 50#/sq. ft. for future wearing surface.

BILL OF MATERIAL

ITEM	UNIT	TOTAL
PRECAST CONCRETE BOX CULVERT 12'x6'	FOOT	39

HRG PROJECT NO.: 220908
HRG PROJ. CONTACT:
FILE NAME: 220908_sht_det2.dgn
PLOT DRIVER: il_pdf_bw.pltcfg
PEN TABLE: plotlabel.tbl

HRGreen.com
Illinois Professional Design Firm # 184-001322

USER NAME = txu	DESIGNED - XX	REVISED - 1 12/18/2025	
	DRAWN - XX	REVISED -	
PLOT SCALE = 8.0000 ' / in.	CHECKED - JJS	REVISED -	
PLOT DATE = 12/3/2025	DATE - 7/23/2025	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CONSTRUCTION DETAILS - BOX CULVERT
WINN ROAD AND EAST SOLON ROAD

SCALE: N.T.S. | SHEET 2 OF 9 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
•	23-00021-00-RS	McHENRY	34	21
		CONTRACT NO. 61M07		
	ILLINOIS	FED. AID PROJECT		